Examiner Arguments and Applicant Responses

Examiner Argument

The affidavit under 37 CFR 1.132 filed May 4, 2009 is insufficient to overcome the rejection of claims based upon the rejection based on 35 USC 103 as set forth in the last Office action because: It refer(s) only to the system described in the above referenced application and not to the individual claims of the application. Thus, there is no showing that the objective evidence of nonobviousness is commensurate in scope with the claims. See MPEP § 716.

The Declaration of Mr. Colin Francis Walker has been considered but fails to overcome the 103 rejections because it refers mostly to the referenced application, .e.g, paragraph 7 states "there is no known method of apparatus to combust hydrogen with a pure form of oxygen without storage of oxygen"; paragraph 9 states "combust a pure form of hydrogen with a pure form of oxygen", these are not parts of the independent claims, and maybe new matter. Furthermore, the declaration does not provide any actual proof, supportive evidence (note MPEP 716.01(c)), and simply repeat the argument of Applicant which is improper because Applicant arguments cannot take place of evidence, MPEP 716.01(c). The declaration only mentions the applied references in paragraph 15 with a conclusion "I do not find this prior art cited by the Patent Examiner to have made the pending claims within US Patent application 10/716,316 as obvious", the statement is simply an opinion or a conclusion without any supportive evidence, or simply repeats Applicant's arguments during prosecution which is given little weight.

Applicant's Response

Applicant appreciates time of the Examiner to review Applicant's Office Action Response and to formulate his argument.

Applicant respectfully presents to the Examiner that Applicant re-contacted declarant Walker and declarant Vaughan, obtaining from both a revised declaration which: 1) directly quotes reliance upon the instant pending claims, 2) compares cited prior art to the instant pending claims, 3) states each and every element of the three (3) elements required of the instant claims to answer a long felt and unresolved need, and 4) demonstrates that the instant claims have identified the source of the problem.

Examiner Argument

Applicant argued Penfornis does not disclose the combustion of a hydrogen fuel and it would not have been obvious to combine the references. The Examiner disagrees because Applicant attempts to attack the references individually in a 103 rejection which is improper. Tindell already teaches the concept of burning hydrogen. Penfornis does not need to show that concept again.

Applicant's Response

Applicant appreciates time of the Examiner to review Applicant's Response and formulate his argument. Applicant appreciates and now understands the Examiner's Argument in relation to individually attacking a 103 reference. Applicant attempts to make his argument proper in this Office Action Response.

Applicant respectfully presents to the Examiner that there is no limitation within instant independent claim 216 or teaching within the instant specification for combustion of a hydrocarbon, use of a flue gas (which is from hydrocarbon combustion), or use of the steam generated by a flue gas to produce power, wherein said power drives an air separation unit, as is taught by Penfornis et al. To demonstrate, Applicant quotes from Penfornis, et al.:

In the abstract:

> An air separation unit separates air into an oxygen-rich and oxygen-deficient gas. Fuel gas and the oxygen-rich gas are preheated at heat exchangers through which hot flue gas flows. Combustion of the preheated fuel and oxygen-rich gases result in the hot flue gas. The hot flue gas is cooled at the heat exchangers and flows through a waste heat boiler. Water and/or steam flowing through the waste heat boiler

> absorbs energy from the cooled flue gas thereby producing heated steam. The heated steam flows through a turbine to produce power. The power is transferred to the air separation unit, thus reducing a power requirement of the air separation unit needed to separate the air. Emphasis added.

(As these teachings are repeated throughout Penfornis, et al., Applicant wishes to simply provide one quotation of teaching.) Therefore, Penfornis, et al. teaches use of a "flue gas" to produce heated steam, e.g. the heat exchanger "absorbs energy from the cooled flue gas thereby producing heated steam". And, it is that resultant "heated steam" which "reduc[es] a power requirement of the air separation unit". Again, as is well known in the art, a flue gas comprises CO_2, which is an impossibility to exist in the combustion of hydrogen, as H_2. Flue gas, as defined by Wikipedia:

> "**Flue gas** is gas that exits to the atmosphere via a **flue**, which is a pipe or channel for conveying exhaust gases from a fireplace, oven, **furnace**, **boiler** or **steam generator**. Quite often, it refers to the **combustion** exhaust gas produced at **power plants**. Its composition depends on what is being burned, but it will usually consist of mostly **nitrogen** (typically more than two-thirds) derived from the combustion air, **carbon dioxide** (CO_2) and **water vapor** as well as excess **oxygen** (also derived from the combustion air). It further contains a small percentage of pollutants such as **particulate matter**, **carbon monoxide**, **nitrogen oxides** and **sulfur oxides**." (ref. **http://en.wikipedia.org/wiki/Flue_gas**) [December 06, 2009]

And, directly in relation to the combustion of fossil fuels:

> "**Flue gas emissions from fossil fuel combustion** refers to the **combustion** product gas resulting from the burning of **fossil fuels** [1]. Most fossil fuels are combusted with ambient air (as differentiated from combustion with pure **oxygen**). Since ambient air contains about 79 volume percent gaseous **nitrogen** (N_2)[2], which is essentially non-combustible, the largest part of the **flue gas** from most fossil fuel combustion is uncombusted nitrogen. The next largest part of the flue gas is **carbon dioxide** (CO_2) which can be as much as 10 to 15 volume percent or more of the flue gas. This is closely followed in volume by water vapor (H_2O) created by the combustion of the hydrogen in the fuel with atmospheric oxygen. Much of the 'smoke' seen pouring from **flue gas stacks** is this water vapor forming a cloud as it contacts cool air." (ref. **http://en.wikipedia.org/wiki/Flue_gas_emissions** _from_fossil_fuel_combustion) [December 06, 2009]

Further, to demonstrate that Penfornis, et al. teach the combustion of a hydrocarbon, in col. 5 Penfornis, et al. teach:

> The flow of oxidant gas **3** and a flow of fuel gas **9** are directed towards heat exchanger system **11**. Examples of fuel gas include, but are not limited to, natural gas, other gaseous hydrocarbons, and mixtures thereof. Emphasis added.

In contrast to Penfornis et al., the instant independent claim states "wherein a-mixture of oxygen, as O_2, and hydrogen, as H_2, is combusted".

Applicant agrees with the Examiner that Tindel et al. teach the combustion of hydrogen, as H_2. Applicant agrees with the Examiner that Penfornis et al. teach the use of available energy in a flue gas to "reduc[e] a power requirement of the air separation unit needed to separate the air".

Applicant wishes to respectfully present to the Examiner wherein Applicant and the Examiner have disagreement, such that it is possible, maybe, Applicant and Examiner can come to agreement. First, Penfornis, et al. teach the use of a hydrocarbon, as referenced previous; therefore, at a minimum, such a teaching by Penfornis, et al., teaches away from the instant pending claims, which teach combustion with hydrogen, as H_2. Second, Penfornis, et al. only teach the use of a flue gas to "reduc[e] a power requirement of the air separation unit needed to separate the air" by "absorb[ing] energy from the cooled flue gas thereby producing heated steam". To be sure of this fact, Applicant has again reviewed Penfornis, et al. completely finding no other teaching or suggestion, either in text or in figure. Therefore, Penfornis, et al. do not teach an element of the instant independent claim which states:

> "at least a portion of the energy of combustion creates at least one of:
> mechanical rotating energy, and
> steam in the combustion chamber, wherein
> at least one of the mechanical rotating energy and the steam powers at least a portion of said air separation" (Emphasis added)

Applicant, then, respectfully presents to the Examiner that between Tindel, et al. and Penfornis, et al., not all of the limitations within instant independent claim 216 are taught.

Applicant respectfully presents, then, to the Examiner, in light of the above evidence and argument, to obtain the instant independent claim, one must perform "hindsight reconstruction"; as, not all of the instant independent claim elements are taught in the citations (ref. MPEP 2141 I, 2141.01(a) III, 2142, 2145 XA, Further, as the second citation, Penfornis et al. teaches the combustion of a hydrocarbon, Penfornis et al. teaches away from the instant claims (ref. MPEP 2131.05, 2141.03 VI, 2143.01 I, 2144.05 III, 2145 XD.

Applicant respectfully requests allowance of claims 216-220, 222-229, 231-232, 235, 237-253, 258-260, 342 and 350, as presented herein.

Examiner Argument

Regarding claim 242, Applicant argued Nambu requires a hydrocarbon alcohol. Please note that claim 242 simply recites either hydrogen or oxygen being mixed with frozen water to form gel. Nambu clearly teaches the hydrogel in frozen water under freezing temperature. It does not matter if Nambu needs to use hydrocarbon alcohol because as set forth above, if the reference teaches more than the claimed invention, the rejection is still valid.

Applicant's Response

Applicant appreciates time of the Examiner to review Applicant's Office Action Response and formulate his argument.

Applicant understands and respects the position of the Examiner that Nambu does teach the freezing of water. However, after that point, most unfortunately, Applicant and the Examiner disagree.

Applicant respectfully presents to the Examiner that Nambu does not present, teach or suggest a frozen gel comprising hydrogen, as H_2, which is claimed in the instant claim. Neither is there any suggestion or motivation within any other cited reference to store hydrogen or oxygen in any state which is in combination with frozen water; therefore, all of the claim limitations within instant dependent claim 242 have not been taught by the citations. Had Nambu taught the inclusion of either hydrogen, as H_2, or of oxygen, as O_2, in any frozen aqueous solution, Applicant could agree with the Esaminer's Argument. However, Applicant cannot locate within Nambu any such teaching or suggestion. Therefore, Applicant respectfully asks the Examiner wherein Nambu there is a teaching for a frozen aqueous solution comprising either H_2 or O_2. Applicant appreciates the time of the Examiner in regards to the question of Applicant.

Applicant respectfully requests allowance of claim 242 as presented herein.

Secondary Considerations

Applicant respectfully presents to the Examiner secondary considerations of: 1)

Long Felt and Unresolved Need, 2) Skepticism of Experts, and 3) Identification of the Source of the Problem.

1. Long Felt and Unresolved Need

Applicant, in an effort to ascertain if Applicant could meet needs of the Examiner, re-contacted Mr. Vaughan and Mr. Walker in regards to the Examiner's previous constructive remarks regarding declarations there from. Applicant found both Mr. Vaughan and Mr. Walker in agreement that the instant claims are the basis of their declarative statements, each providing an updated declaration, which is attached herein. Applicant respectfully refers the Examiner to §§ 3-7 and 9 of the declaration of Mr. Vaughan, wherein is stated:

3. I have reviewed the pending claims within the styled application, which are evidenced herein as Exhibit A, along with the styled patent application, which teaches improvements to the art claimed in Exhibit A.

4. Based on my experience, I believe I should be viewed as someone of expert skill in the art of combustion science and engineering. ***Based on my review of Mr. Haase's pending claims, as evidenced in Exhibit A, I believe that the pending claims of this patent comprise a novel approach which would satisfy a long felt need for humanity***.

5. My decision that Mr. Haase's pending claims answer a long felt need of humanity is first based upon the fact that prior to and subsequent to Mr. Haase's pending claims, there is no solution within the art for a combustion engine which would operate without the production of oxides of carbon. There is a long felt need for a combustion engine which would operate without the production of oxides of carbon and which provides adequate power and/or torque per displacement. As is known by most of humanity, global climate change is a significant threat to life as is known today; therefore, the long felt need of a combustion engine which would operate without the production of oxides of carbon has been a persistent and well known long felt need for those in the art and has been known by those of ordinary skill in the art.

6. My decision that Mr. Haase's pending claims answer a long felt need of humanity is second based upon the fact that no one else prior to or since Mr. Haase's pending claims has satisfied humanity's long felt need for a combustion engine which would operate without the production of oxides of carbon and which would provide adequate power and/or torque.

7. My decision that Mr. Haase's pending claims answer a long felt need of humanity is third based on my belief that application of Mr. Haase's pending claims, along

with knowledge of those of ordinary skill in the art, will answer the long felt need of humanity for a combustion engine which operates without the production of oxides of carbon and which would provide adequate power or torque.

9. As combustion methods, engines and devices is a significant market and as there exist many marketed devices within the combustion, engine and turbo-machinery industries in combination with a world wide knowledge of the environmental consequences of hydrocarbon combustion methods, there should not previously nor today exist any lack of interest or lack of appreciation of an invention's potential or marketability to a method or apparatus as claimed and presented in U.S. Patent Application 10/348,071.

Applicant also respectfully refers the Examiner to §§ 4-9 and 19 of the declaration of Mr. Walker, wherein is stated:

4. I have reviewed the pending claims within the styled application and which are evidenced herein as Exhibit A.

5. Based on my experience, I believe I should be viewed as someone of expert skill in the art of combustion science and engineering. ***Based on my review of Mr. Haase's pending claims, as evidenced in Exhibit A, I believe that the pending claims of this patent comprise a novel approach which would satisfy a long felt need for humanity***.

6. I have reviewed the pending claims within the styled application and which are evidenced herein as Exhibit A.

7. My decision that Mr. Haase's pending claims answer a long felt need of humanity is first based upon the fact that prior to and subsequent to Mr. Haase's pending claims, there is no solution within the art for a combustion engine which would operate without the production of oxides of carbon. There is a long felt need for a combustion engine which would operate without the production of oxides of carbon and which provides adequate power and/or torque per displacement. As is known by most of humanity and studied by NASA, global climate change is a significant threat to life as is known today; therefore, the long felt need of a combustion engine which would operate without the production of oxides of carbon has been a persistent and well known long felt need for those in the art and has been known by those of ordinary skill in the art.

8. My decision that Mr. Haase's pending claims answer a long felt need of humanity is second based upon the fact that no one else prior to or since Mr. Haase's pending claims has satisfied humanity's long felt need for a combustion engine which would operate without the production of oxides of carbon and which would provide adequate power and/or torque.

9. My decision that Mr. Haase's pending claims answer a long felt need of humanity is third based on my belief that application of Mr. Haase's pending claims, along with knowledge of those of ordinary skill in the art, will answer the long felt need

of humanity for a combustion engine which operates without the production of oxides of carbon and which would provide adequate power or torque.

19. As combustion methods, engines and devices comprise a significant market and as there exist many marketed devices within the combustion, engine and turbo-machinery industries in combination with a world wide knowledge of the environmental consequences of hydrocarbon combustion methods, there should not previously nor today exist any lack of interest or lack of appreciation of an invention's potential or marketability to a method or apparatus as presented and claimed by Mr. Haase.

Applicant also asked both declarants to review the Examiner's Citations. In response, Mr. Vaughan declares in § 10:

10. I have read and understand the prior art of record cited against U.S. Patent Application 10/348,071, specifically U.S. Pat. Nos. 4,841,731; 7,062,912; 6,588,212; 5,899,072; 5,516,359; 4,440,545; 3,975,913; 4,664,857; and 6,698,183. While the prior art cited teaches aspects of the pending claims, it is my professional opinion that the prior art does not render the pending claims obvious; as if it had, someone else would have developed by now.

Also, Mr. Walker declares in § 20:

20. I have read and understand the prior art of record cited against U.S. Patent Application 10/348,071, specifically U.S. Pat. Nos. 4,841,731; 7,062,912; 6,588,212; 5,899,072; 5,516,359; 4,440,545; 3,975,913; 4,664,857; and 6,698,183. I have reviewed the pending claims as of this date within U.S. Patent Application 10/790,316 and compared the pending claims with the prior art cited by the Patent Examiner, specifically U.S. Pat. No. 4,841,731 (Tindel et al.); U.S. Pat. No. 7,062,912 (Penfornis et al.); U.S. Pat. No. 6,588,212 (Wallace et al.); and U.S. Pat. No. 4,664,857 (Nambu). I do not find this prior art cited by the Patent Examiner to have made the pending claims within U.S. Patent Application 10/790,316 as obvious. In fact, I find Penfornis et al. and Wallace et al. as improvements upon existing hydrocarbon processes; whereas, the Haase Application is a new and different process. In many instances, I find the art cited by the Patent Examiner to lead one away from the pending claims within U.S. Pat. Application 10/790,316, attached herein as Exhibit A. While the prior art cited teaches aspects of the pending claims, it is my professional opinion that the prior art does not render the pending claims obvious; as if it had, someone else would have developed by now.

Applicant respectfully presents to the Examiner that the demonstration of Long Felt and Unresolved Need is a good demonstration of non-obviousness; as, if the instant claims had been obvious prior to the Applicant's Application, then the instant claims would have been practiced in answer to the Long Felt and Unresolved Need (ref. MPEP 716.01(a),

716.01(c), 716.04, 2141 II, 2141.01 V, and 2144.05 III).

2. Skepticism of Exerts

While Applicant provided previous evidence of skepticism and disbelief of experts, e.g. the US DOD, Applicant respectfully provides evidence from litigation that Applicant has against one who declares to be "one of expert skill in the art" and who provided an expert opinion, which provided significant skepticism and disbelief, and which eliminated funding for development of the instant independent claims from a capable funding authority. Specifically, Applicant refers the Examiner to Applicant's Declaration, wherein Exhibit 1 is Applicant's First Amended Petition in the State of Texas, and wherein Applicant filed suit against Mr. Chris Block and GIM Resources in regards to a Technical Report of Mr. Block and of GIM Resources, Inc., Exhibit 2, which states:

> "Unfortunately, the patent application primarily demonstrates a complete lack of understanding by the inventor of the thermodynamics of existing fossil fuel/ air combustion engines as well as a lack of understanding of the thermodynamics of the proposed invention...I suggest that Element Markets not pursue this technology."

Applicant respectfully presents to the Examiner that such statements by one purported to be one of Expert Skill in the Art or even by one of Ordinary Skill in the Art would demonstrate that the Instant Invention is not Obvious (ref. MPEP 716.01(a), 716.05, 2145, 2164.08 I(c)).

3) Identification of the Source of the Problem

Finally, Applicant respectfully presents to the Examiner that Applicant, within the instant claims, has identified a solution to a significant challenge of humanity by identifying the "source of the problem" (ref. MPEP 2141.02 III, IV) for which others have expended significant effort. This is evidenced within the instant specification §§ 002-005, 010-021, 041-054, 056-063, and 102-104, as well as the abstract. This is also evidenced within the declaration of Mr. Christopher Vaughan in § 8, as well as within the declaration of Mr. Walker in §§ 15-18.

CONCLUSION

In view of the foregoing, Applicant believes that the claims, as presently amended, are in order for allowance; Applicant respectfully requests favorable reconsideration of this response and amendment and allowance of the claims at the earliest opportunity.

Applicant has respectfully presented to the Examiner that the citations either: **do not teach the instant claim limitations or teach away from the intended purpose of the instant claims**; and that, **hindsight reconstruction to obtain all of the limitations**.

Applicant has also respectfully presented to the Examiner that the cited combinations do not present or teach **the source of the problem, e.g. production of oxides of carbon and of nitrogen,** as has Applicant.

In support of Applicant's Argument, Applicant has further respectfully presented secondary considerations in the form of two declarations, one from a person of expert skill in the art and one from a person of ordinary skill in the art, both of which demonstrate that the instant invention and the instant invention claims **answer a long felt and unresolved need**, which has been recognized by those of ordinary skill in the art for some time and which was not answered prior to the filing of the instant invention.

Further, Applicant has further still presented **skepticism and/or disbelief to the instant invention**, as claimed, from one of expert skill in the art.

Applicant appreciates the time and effort afforded by the Examiner in the prosecution of the instant claims for the instant invention.

As Applicant has respectfully traversed all of the Examiner's rejections, Applicant herein requests the award certificate for the instant claims as amended and presented herein.

Respectfully submitted,

Date: December 7, 2009

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